

**CARLSBAD MUNICIPAL WATER DISTRICT
CLASS SPECIFICATION**

JOB TITLE: **SCADA TECHNICIAN**

DEPARTMENT: **MAINTENANCE & OPERATIONS**

BASIC FUNCTION:

Under general supervision perform or assist in a variety of responsible duties in the design, installation, programming, testing, maintenance, repair and calibration of the Water, Recycled Water and Wastewater SCADA and electrical systems and to perform related duties as assigned.

DISTINGUISHING CHARACTERISTICS:

Initially under close supervision, incumbents learn and perform a variety of routine tasks and duties in the installation, testing, maintenance, repair and calibration of the SCADA and electrical systems. Initially employees are not required to have the more advanced knowledge associated with system design functions, system programming, troubleshooting the host system and advanced electrical systems. Employees progressing within this classification perform higher level system design, programming, troubleshooting, electrical functions and contractor coordination and oversight. Under general direction, incumbents perform a variety of advanced tasks and duties in the design, programming, troubleshooting, electrical functions and contractor coordination and oversight. Possess a strong electrical background, comprehension of system hydraulics and pump dynamics.

KEY RESPONSIBILITIES:

(These are representative duties and the emphasis on certain duties will vary depending on the job assignment.)

Participate and assist with the design phases of the SCADA systems in close coordination with and consensus of the operations divisions having ultimate responsibility for operational use of the SCADA systems.

Perform the construction of remote installation units that will include electromechanical devices, remote input/output units (RTUs/PLCs) and communication equipment. Develop plans and schematics for all sites.

Programming Process Control Software to create graphical displays of monitoring and control functions, determining alarm status indicators, and historical data storage/display.

Analyze graphical displays, meter readings, alarms, utility bills and reports to identify anomalies, operational inefficiencies, design and installation problems and issues. Work

with and make recommendations to utility providers, operations, designers and installers for correction or improvement.

Perform maintenance, repair and calibration of all electromechanical sensors, transmitters, indicators, meters, etc. to insure proper readings of all monitored analog functions.

Perform maintenance on all computer related, electrical, radio, solar and UPS systems.

Perform testing of all discrete functions from the remote facility to the SCADA display.

Perform routine checks of all electrical systems including pumping systems.

Perform software system updates and server management.

Update SCADA records and as-builts.

Troubleshoot computer, electrical, phone, and radio system failures.

Order and track equipment, parts, materials and supplies.

Provide coordination and oversight of contractors when used for any SCADA and electrical system needs.

Perform related duties as assigned.

REPORTING RELATIONSHIPS:

The SCADA Technician reports to the Public Works Supervisor.

QUALIFICATIONS:

Knowledge of:

Principles, practices, techniques, theory and operation of electronic and electrical equipment including low to medium voltage industrial electrical systems, components, and motors.

Communications systems as used in the remote process control field including hardwire modems, wireless modems, cellular communications and radio.

Computers and applications as used in the process control field.

Read and interpret electrical plans, schematics, and wiring diagrams.

National Electrical Code and Safety Orders of the California Department of Industrial Relations.

All applicable safety practices, procedures, orders, etc.

Oral and written communication skills.

Applicable laws, codes, regulations, policies and procedures.

Interpersonal skills using tact, patience and courtesy.

Ability to:

Install, maintain, and repair equipment related to electronics, instrumentation control, telemetry and telecommunications.

Calibrate and test a variety of systems designed for monitoring and control.

Read, interpret and understand plans, schematics, technical manuals, diagrams, blueprints and drawings.

Develop, design, assemble, and install remote SCADA units.

Work independently and efficiently to carry out assignments.

Communicate effectively both orally and in writing.

Interpret, apply and explain rules, regulations, policies and procedures.

Establish and maintain cooperative and effective working relationships.

Analyze situations accurately and adopt an effective course of action.

Operate a computer and other office equipment.

Meet schedules and time lines.

Work safely and maintain a safe work environment.

Plan and organize work.

Maintain detailed records and prepare clear and concise reports.

EXPERIENCE AND EDUCATION:

Any combination equivalent to experience and education that could likely provide the required knowledge, skills and abilities is qualifying. A typical way to obtain the knowledge, skills and abilities outlined above is:

Minimum two years of increasingly responsible experience in the maintenance, repair and installation of SCADA, instrumentation, telemetry, electrical, computer and communications systems. College level course work in electronics or a related field.

SPECIAL REQUIREMENTS:

Valid California Drivers License

CDPH Water Distribution Operator Grade II

PHYSICAL STANDARDS:

Must possess sufficient strength and stamina to lift, carry and manipulate objects weighing up to 50 lbs. maintain physical condition necessary for standing walking, sitting, kneeling or bending for prolonged periods of time. Must be willing to work outdoors, in all weather conditions; to work in confined places with exposure to potentially hazardous conditions, and to work at heights.

Must be available to work overtime and respond to emergency calls; work varying hours, including weekends, holidays, days off and perform “stand-by” duty as assigned.

ENVIRONMENTAL CONDITIONS:

Office and field environment; travel from site to site; exposure to noise, dust, grease, smoke, fumes, gases, electrical energy, toxic materials, and inclement weather conditions; work in or with water, recycled water and wastewater.

DATE APPROVED: June 16, 2009